



**The Secretary of Energy**  
Washington, DC 20585

June 8, 1990

The Honorable John T. Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
Suite 675  
600 E Street, N.W.  
Washington, D.C. 20004

Dear Chairman Conway:

On March 8, 1990, the Defense Nuclear Facilities Safety Board forwarded to the Department of Energy Recommendation 90-2 regarding DOE Orders. I am enclosing the Department's response.

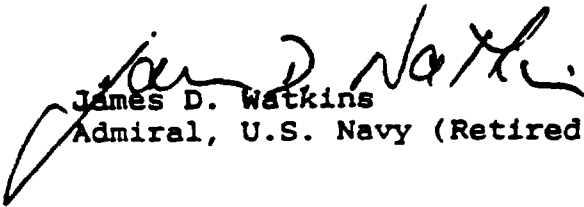
I want to take this opportunity to thank the Board for granting the Department's request for additional time to prepare this response. I agree with the thrust of Recommendation 90-2. There is ample documentation of the need for a thorough review of DOE Orders, dating back to the Crawford Report and the National Academy of Sciences studies. I was committed to undertaking this effort when I came to the Department, and have taken steps, described in our response, aimed at addressing this issue.

As I am sure the Board is aware, the effort to reconstruct, identify, and appropriately update DOE's site-specific nuclear facility standards presents a considerable challenge to us over the next several years. The Department's Task Force on Nuclear Safety Directives, in particular, is establishing the DOE-wide foundation of fundamental nuclear safety requirements that will be applicable to all of the Department's nuclear facilities.

As to the status of these efforts at the four sites requested, our response also indicates how the Department will approach its efforts to develop implementation plans for the three operating defense facilities. These plans will be forwarded to the Board 90 days after this submission is published in the Federal Register.

In accordance with Section 315(d) of the Atomic Energy Act of 1954, as amended, this response will be published in the Federal Register and provided to the Congress.

Sincerely,

  
James D. Watkins  
Admiral, U.S. Navy (Retired)

Enclosure

SUPPLEMENTAL RESPONSE OF THE DEPARTMENT OF ENERGY TO THE MARCH 8, 1990,  
RECOMMENDATION OF THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD

In the Department of Energy's (DOE) initial response, I noted that I had initiated programs to address and remedy some of the issues contemplated by Recommendation 90-2 shortly after taking office over a year ago. In light of these and other ongoing efforts within the Department, there are several aspects of Recommendation 90-2 that merit further discussion.

As I pointed out in the Department's initial response, reconstitution of the design and construction standards for facilities built several decades ago is a costly task that would not, in my view, be a prudent use of resources. Both the changing mission of many of our older facilities and the extensive upgrading underway or planned negate the value of such historical information.

I believe that the concerns of the Board and the Department are appropriately addressed by specifying the design and construction standards that the Department shall henceforth require for evaluation, modification, and maintenance of existing defense nuclear facilities and for new operations. Based on discussions between Board staff and DOE staff, I understand that such an approach is acceptable to the Board.

As the Board is aware, the mission of the Hanford Site is currently under review in consideration of reduced need for materials in light of the changing world situation, budget constraints, and other factors. I propose, therefore, that the Department's response to Recommendation 90-2 with respect to Hanford be deferred until I have completed my assessment of the Hanford Site. The Department's implementation plan will establish a schedule for our deferred response on Hanford. Discussions with the Board and its staff indicate that this approach is acceptable.

In supplemental response to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 90-2, the DOE will:

- (1) Identify the specific standards which it considers apply to the design and construction (including the evaluation, modification, and maintenance of existing facilities or new work) operation and decommissioning of DOE's defense nuclear facilities at the following defense nuclear facilities:
  - o Savannah River Site: K, L, and P Reactors;
  - o Rocky Flats Plant: Buildings 371, 374, 559, 707, 771, 774, 776, 777, and 779;
  - o Waste Isolation Pilot Plant; and

- o Hanford Site: [On a deferred schedule to be provided in the implementation plan for this recommendation and agreed to by the Board.] Plutonium Finishing Plant; PUREX Facility, together with associated waste processing and storage facilities; N Reactor (including decommissioning); and K Reactor Storage Basins.
- (2) The Department will provide its views on the adequacy of the standards identified in the above process for protecting public health and safety at the defense facilities referred to and determine the extent to which the standards have been implemented at these facilities.

It must be understood that the entire issue of appropriate standards for DOE nuclear facilities is undergoing a sweeping review by the Department and that in the meantime much of the information provided will reflect work in progress which is subject to change as our evaluations continue. Much of this work is currently part of other DNFSB reviews, e.g., the standards currently being discussed with the Board in relation to the planned restart of the SRS reactors and implementation of the Rocky Flats Systematic Evaluation Program being developed in accordance with Board Recommendation 90-5. The Board and the public will be kept informed of changes to DOE standards.

The Department intends to transmit its implementation plan in response to the Board's recommendations by September 10, 1990.

## WIPP RESPONSE

With regard to Standards Identification, we (EM and the WIPP Project Office) are in the process of developing a database to identify the specific DOE Orders and standards which apply to the four phases of WIPP: design, construction, operations, and decommissioning. These phases will be further subdivided into four levels of standards: DOE Headquarters issued Orders; DOE-Albuquerque issued implementing Orders; Management and Operating Contractor (MOC-Westinghouse) directives; and industry (endorsed) codes, guides and standards. As described in our June 8, 1990 response, the DOE Orders and many of the higher level standards are identified in the facility's Final Safety Analysis Report (FSAR) and Final Supplemental Environmental Impact Statement. However, identification of specific MOC directives and applicable industry codes and standards will require a significant effort including researching onsite construction package documentation. We therefore must revise our proposed submission date of the database from October to December 1990. This additional time is necessary to research, assemble, and organize the information into the database. For the Board's information, Chapter 3, "Principal Design Criteria," of the WIPP FSAR, which was approved by the Department on June 12, 1990, documents in a summary manner, the principle design criteria utilized during WIPP's design and construction to ensure WIPP can be operated without undue risk to the general public and worker health and safety. Chapter 3 of the approved FSAR has been provided to the Board.

The final recommendation by the Board concerned the implementation of the applied standards to WIPP. Our previous response remains valid. The ongoing and scheduled Operational Readiness Reviews (ORR) and Inspections will demonstrate the facility is in compliance with the identified codes and standards. Although much of this documentation is now available, there remain open issues with the review organizations. In addition, a ORR for the Test Phase activities has yet to be conducted. Upon closure of the currently open items (expected in September 1990), we will provide the appropriate documentation to the Board. Upon completion of the Test Phase ORR, which will be completed prior to Test Phase waste receipt, we will provide the appropriate documentation to the Board. In addition, we propose to include a copy of the Safety Evaluation Report which documents the independent review of the WIPP FSAR conducted by DOE-EH. We fully expect these reviews will provide documented proof the Department has implemented the identified applicable Orders, codes, and standards.

As to the adequacy of the standards, we are in the processing of formulating a response to this recommendation.

**RESPONSE OF THE DEPARTMENT OF ENERGY TO THE MARCH 8, 1990,  
RECOMMENDATIONS OF THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

On March 8, 1990, the Defense Nuclear Facilities Safety Board (the Board) issued Recommendation 90-2 as follows:

(1) That the Department identify the specific standards which it considers apply to the design, construction, operation and decommissioning of defense nuclear facilities of the Department of Energy (including all applicable Departmental Orders, regulations and requirements) at the following defense nuclear facilities as follows:

- o Savannah River Site: K, L and P Reactors
- o Rocky Flats Plant: Buildings 371, 374, 559, 707, 771, 774, 776, 777 and 779
- o Hanford Site: Plutonium Finishing Plant; Purex Facility, together with associated waste processing and storage facilities; N-Reactor (including decommissioning); and K-Reactor Storage Basins
- o Waste Isolation Pilot Plant

(2) That the Department provide its views on the adequacy of the standards identified in the above process for protecting public health and safety at the defense facilities referred to, and determine the extent to which the standards have been implemented at these facilities.

**DOE RESPONSE**

As the Board is aware, the need to identify and assess the adequacy of standards employed in the design, construction and operation of critical facilities in the DOE defense nuclear complex is not a new issue. This issue was raised in the so-called "Crawford Report" of 1981 assessing the safety of the Department's nuclear reactors, as well as in the 1987 report of the National Academy of Sciences on "Safety Issues at the Defense Production Reactors." Unfortunately, little had been accomplished in response to the discussion of these issues in the "Crawford" and National Academy Reports prior to the time I became Secretary of Energy. Therefore, shortly after I was confirmed as Secretary, I directed that efforts be initiated to address these issues as expeditiously as possible.

However, the magnitude of the task of reconstructing the design bases for some of the Department's older facilities has made it clear that this is a long term effort. This is principally because the defense nuclear complex, including the Savannah River, Rocky Flats and Hanford facilities about which the Board has inquired, consists predominantly of facilities that were designed, constructed and placed in operation 30-50 years ago. The technical standards employed at that time were largely those of the operating contractor or were manufacturers' association standards. A uniform policy for application of industry engineering codes and standards was not in place. Similarly, requirements to document the particular application of standards and to retain such documentation were not in force. While the fact that current practices were not followed forty years ago with regard to design

documentation does not necessarily indicate that there are inadequacies in design or performance, there is a need to reconstitute much of the information necessary to define and evaluate the standards employed. Thus, while I am not in a position to supply all of the information that the Board has requested, there are a number of initiatives which have been completed, are underway, or are planned, which will be helpful in securing much of the needed information.

First, the DOE operations offices which oversee activities at Savannah River (SRS), Hanford, and Rocky Flats (RFP) were directed to undertake a comprehensive review of facility documentation and to develop a plan for the actions necessary to respond fully to the recommendations. The SRS, Hanford site, and RFP have each completed an initial assessment of the availability of the detailed documentation needed for completion of the evaluations recommended by the Board. These activities have included preliminary efforts aimed at locating and initially evaluating existing data and documentation, as well as prototype searches. The conclusion drawn from these efforts is that despite a concerted attempt to retrieve information, including searches of offsite archive files, where available, it is certain that additional efforts will be required to locate necessary documentation. Eventual efforts may require reconstitution of the design bases for some facilities.

Second, with regard to compliance with current standards, late last year the Department initiated a program at SRS to identify the DOE orders pertinent to safety, security and quality assurance, and to verify compliance with those orders. The initial efforts under this program were carried out between January and May 1990 for the restart phase of the K, L and P Reactors. Numerous noncompliances were identified and corrective actions are being developed. The management plan and findings for this effort are provided as Attachment 1.

Third, a DOE Order Compliance Verification Program similar to that at SRS has been initiated at RFP. The onsite portion of this verification effort has been completed for the resumption of operations at RFP. The management plan used to guide this effort is provided as Attachment 2. The report of findings is nearing completion and will be provided to the Board as soon as possible.

Fourth, my early concerns regarding the degree of compliance of DOE facilities with existing DOE requirements and external regulations prompted me, in June 1989, to establish the "Tiger Team" appraisal program in the field. To date, the Tiger Teams have completed environmental, safety and health compliance reviews at fourteen sites, including SRS and RFP, and are currently conducting such a review at Hanford. These reviews have served not only to verify the status of compliance with existing operational requirements, but have also established a baseline of environmental, safety and health requirements applicable to specific facilities and operations. This effort has already paid substantial dividends at these sites by fostering action to ensure full compliance with the applicable operational standards.

Fifth, based upon the recommendations in the "Crawford" and National Academy of Sciences Reports, as well as my own review, I directed the formation of a Task Force on Nuclear Safety Directives. The nuclear safety requirements currently applicable to the Department's facilities are contained in the DOE

Orders listed in Attachment 3. The charter of the Task Force is to rewrite these orders to improve their specificity, consistency and enforceability, and to bring them more in line with what is required in the commercial nuclear sector. The rewritten requirements will then be issued as proposed regulations for public notice and comment as specified in the Administrative Procedure Act. In assessing the adequacy of current DOE safety requirements and standards, the Task Force will review the existing comprehensive set of nuclear safety principles embodied in Nuclear Regulatory Commission regulations and policy statements, products of international cooperative efforts, and the DOE orders listed in Attachment 3. These nuclear safety principles provide a framework for use in developing regulations specific to DOE nuclear facilities.

Finally, following the establishment in January 1990 of the Office of Nuclear Safety Policy and Standards within the Office of Nuclear Energy, the Department has implemented a revised Order concerning Unusual Occurrence Reporting, and has drafted Orders on Conduct of Operations, Maintenance Management and Training which are under Departmental review. We expect that these updated requirements will form the basis for the proposed regulations which the Task Force will draft in these subject areas.

Despite the importance of these initiatives, and consistent with the goal of achieving a more in-depth understanding of the design basis for the Department's older facilities, I believe that the Board's recommendation of May 17, 1990, regarding a design review for RFP is particularly pertinent. Specifically, the applicability and sufficiency of standards employed in the design and construction of the Rocky Flats Plant will be investigated as part of an integrated process similar to the Nuclear Regulatory Commission's Systematic Evaluation Program (SEP) for the older commercial nuclear reactor facilities. Further, the appropriateness of this process for other aging facilities in the DOE defense nuclear complex is being evaluated. I will be responding in greater detail to the Board's May 17, 1990, recommendation in the near future.

With regard to the WIPP facility, the Department's project documents contain the specific standards which apply to that facility. These documents include the WIPP Final Safety Analysis Report (FSAR), which will be issued shortly and which defines the facility's safety envelope, and the Final Supplemental Environmental Impact Statement (FSEIS). Under separate cover, we are sending a copy of the FSEIS to the Board. The FSAR will be forwarded to the Board as soon as it is issued. However, these documents do not present the standards applied in a format which we believe would be most helpful to the Board. Therefore, we intend to place the information in a computerized database for ease of presentation, sorting and retrieval. This database will list the specific systems within WIPP and the codes and standards which are applicable to each. We expect that this effort will be accomplished and the results provided to the Board by October 1, 1990. The database will be periodically updated and provided to the Board if changes are required thereafter. WIPP's implementation of, and compliance with, these standards is being addressed as part of the ongoing readiness reviews and inspections that the facility has undergone and will continue to undergo prior to a decision to begin

emplacement of waste for the test phase. The Board will be kept informed of the progress and results of that review effort.

Pursuant to Section 315(e) of the Atomic Energy Act of 1954, as amended, the Department intends to transmit its implementation plan in response to the Board's recommendations within the statutorily allotted time.



**DEPARTMENT OF ENERGY**

**DOE High Priority Defense Nuclear Facilities; Design, Construction, Operation and Decommissioning Standards; Response to Recommendation of the Defense Nuclear Facilities Safety Board**

**AGENCY: Department of Energy**

**ACTION: Notice and Request for Public Comment**

**SUMMARY: Pursuant to section 315(d) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2286(d), the Department of Energy (DOE) hereby publishes notice of the response of the Secretary of Energy (Secretary) to Recommendation 90-2 of the Defense Nuclear Facilities Safety Board, 55 FR 9487-9488 (March 14, 1990), concerning high priority defense nuclear facilities; design, construction, operation, and decommissioning. DOE hereby requests public comment on the response of the Secretary to Recommendation 90-2.**

**DATES: Comments, data, views, or arguments concerning the Secretary's response are due on or before July 11, 1990.**

**ADDRESSES: Send comments, data, views, or arguments concerning the Secretary's response to: Defense Nuclear Facilities Safety Board, 600 E Street, NW, Suite 675, Washington, DC 20004.**

**FOR FURTHER INFORMATION CONTACT: Steven Blush, Director, Office of Nuclear Safety, Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585.**

**DATED:**

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**Joseph E. Fitzgerald  
Acting Director  
Office of Nuclear Safety**